UNIVERSITY OF VAASA

SCHOOL OF ACCOUNTING AND FINANCE

Heidi Arppe

THE RELATIONSHIP BETWEEN LEGAL TECHNOLOGY AND THE REPRESENTATIONS AND WARRANTIES CLAUSE

Master's Thesis in

Business Law

Master's Program in Business Law

VAASA 2019

TABLE OF CONTENTS

LIST OF TABLES

page

UNIVERSITY OF VAASA
School of Accounting and Finance
Author: Heidi Arppe
Topic of the Thesis: The Relationship Between Legal Technology and The Representations and Warranties Clause
Name of the Supervisor: Vesa Annola
Degree: Master of Science in Economics and Business Administration
Master's Program: Master's Program in Business Law
Year of Entering the University: 2014
Year of Completing the Thesis: 2019 **Pages:** 69

ABSTRACT

The legal environment has experienced change in the form of not only globalization but the development of technology. While the concept of representations and warranties clauses has migrated from common law countries to civil law countries, concurrently the new capabilities of machines have been taken into use through the development of legal technology. This thesis aims to understand the relationship between these new movements. The research question of the thesis is: What is the relationship between artificial intelligence based legal technology and the representations and warranties clause as understood under Finnish con-tract law?

Very little research has been done on single contract clauses or the effects of legal technology. This thesis focuses on key concepts such as artificial intelligence and machine learning to form a basis for understanding the parameters of legal technology's capabilities and limits both now and in the future. To gain insight into the nature of the representations and warranties clause, this thesis looks into concepts such as standard clauses, the loyalty obligation and liability limitations. This thesis deviates from the standard method of legal dogmatics and aims to reach conclusions with a reversed method. This thesis processes the single contract clause as it is used in practice and only then attaches legal concepts to it. The sources used in the thesis are mainly well-known pieces of literature in Finland, because sources on either part of the research problem are scarce.

The thesis' key observations were that the representations and warranties clause is multifaceted with existing arguments for and against it being a standard clause by nature, it being tied to the loyalty obligation and its use for liability limitations. In parallel it was found that legal technology, especially contract lifecycle management tools, are not yet at a level that users could really benefit from. This thesis concludes that the ambiguous nature and *in casu* evaluation of the representations and warranties clause affects the use of legal technology in drafting such clauses, in both positive and negative ways.

KEY WORDS: legal technology, representations and warranties, standard clauses

1. INTRODUCTION

1.1. General Focus of Research

As the world has become more connected and different functions and processes have globalized, contracts have also done so. Through overlapping financial markets and the use of the English language, legal systems have been able to adopt characteristics from other systems into their own. At the same time, the development of technology has further sped up. Not only have business relationships and contracts been able to span great distances in the blink of an eye, but the methods for drafting contracts and conducting legal matters have started to evolve. Through the break-throughs made in artificial intelligence and machine learning, progressive thinkers have started the disruption of the legal field.[1] This thesis focuses on the possibilities provided by this new legal technology[2] to draft contracts, in particular representations and warranties clauses.

The name, purpose and content of the representations and warranties clause has transitioned into use from common law to civil law countries. This means that the same contract clause can be found in contracts written in the United States and in contracts written in Finland, even though the legal systems in these two countries are significantly different. In practice, the representations and warranties clause has been in use for a fair amount of time in civil law countries, but the question of the clause's suitability to a different legal system has been much neglected by researchers and legal professionals alike. This gap in research is slowly being addressed, but even so, much more research is needed for a cohesive understanding of the theoretical implications of already standard practices.

Research in the field of contract law has also slowly started to take into account the general shifts occurring between globalization and legal systems. As a rule, what has been done in terms of research in this field tends to start from the rules and principles that govern contracts either locally or globally. These rules and principles have then been used

[1] See for example Susskind (2014).
[2] The simple definition for legal technology is the use of technology to produce legal services (Koulu 2017). The concept will be further studied in the next section of this thesis.

to evaluate contracts and groupings of contract types, which has resulted in contracts being evaluated in their entirety. It is rarer, especially in research under civil law, for contract clauses to be evaluated separately. This thesis aims to address this point from the perspective of the Finnish legal system.

Legal research needs to have a better understanding of contract clauses in parallel with the perspective that contracting parties and legal professionals have. This means that research needs to take into account different clause types, not just contracts as a whole. Until this is done, there will remain a gap between the practical legal world and the theoretical. With this gap in place it will be difficult to try to improve the way contract clauses are drafted either through human legal innovation or the possibilities of legal technology.

This identified gap in the field's research is interesting for a number of reasons. First, contracts are governed less by law than they are by principles, even more so when dealing with business-to-business contracts. This lack in legislation emphasizes the position of different contract clauses that are used. These clauses must be studied to first understand what they are meant to do in practice and then how they relate to the principles already in place in contract law. These same principles will then be used to consider the use of technology to draft representations and warranties clauses.[3]

The position of different contract clauses is exacerbated by the fact that clauses taken into use from other legal systems need to be evaluated from the point of view of the original legal system as well as the one it is transplanted into. Researchers need to understand whether the tools used to evaluate the contract clause in the original legal system have parallels in the new legal system. If these parallels exist, using adopted contract clauses should not cause too many disruptions, but if they do not, contract parties and evaluating legal bodies need a clearer picture of the role of these adopted clauses in foreign legal systems. As will be later identified, the premise for this thesis is that there are equivalent-enough concepts in Finnish contract law as to provide a basis for evaluating the use of the representations and warranties clause in artificial intelligence based legal technology.

[3] Still, in practice it is good to note that in business-to-business contracts litigation is rare, with problems being solved in other ways which are more beneficial to the business relationship.

Second, more often than not, one type of clause is used in contracts of the same type and can have a significant role in determining important details of a contractual relationship. A single contract clause can determine the amount of indemnities to be paid or grounds for the termination of a contract. Especially in the business-to-business world such clauses can be grouped and reused in similar contracts for economic reasons. Understanding the responsibilities, risks and rewards associated with the contract as a whole as well as the most common clauses is imperative for sound decision-making. If and when legal technology can provide businesses with a more economic alternative to contract drafting, there will be a need to identify the extent to which current contract clauses are best suited for use in machine-based contract drafting.

Many contract clauses used in a certain type of contract, for example mergers and acquisitions, have been given permanent names and positions in the contracts they are most commonly used in. In theory they may be viewed as single clauses due to for example their permanent names, but in practice many of these clauses are interdependent and there is much interrelation between them[4]. For the sake of the scope of this thesis the representations and warranties clause is studied independently. Any consideration based on interrelation between different contract provisions must be left to other research, even though it would provide an interesting additional aspect, especially when taking into account the capabilities of artificial intelligence in drafting contracts.

This research is important, because legal technology is already a prevalent solution in today's legal world. In a study conducted in 2018, the International Association for Contract and Commercial Management and Capgemini studied vendors of a certain type of legal technology, contract lifecycle management tools. They found that technology used to aid in the contractual process is already well under way. 44% of vendors were established after 2010, 32% between 2000 and 2010 and only 23% before 2000. Most of these companies still remain as start-ups, with 69% of the companies having between 1 and 100 employees. Only 14% had over 500 employees. Geographically the majority of contract

[4] See for example Wilkman 2018.

lifecycle management tool companies have their corporate headquarters in North America (51% in the USA and 6% in Canada).[5]

Legal technology specifically aimed at contracts is clearly becoming predominant. Taking this type of technology into practical use will most likely be done through the concepts and practices that are already familiar in contract drafting today, such as common contract clauses. For this reason, it is important to begin the research on combining certain elements of contracts with technological advances as soon as possible, to avoid a large gap in research later, when the phenomenon becomes even more widespread.

1.2. Research Question

Legal research today needs to be disrupted. The working methods of lawyers and businesses have changed due to globalization and technology. Now legal research would benefit from studies that follow up with the world it is researching. This thesis focuses on two research problems to give an answer to one research question, which should start the refocusing of research in the field of business law.

The first research problem deals with the first source of disruption to the legal field, globalization. The phenomenon is concretized through the commonly used contract clause known as the representations and warranties clause. This specific clause was chosen for this research, because it is a true example of contract globalization. Representations and warranties have been adopted from common law into civil law countries with very little regard to differences in legal systems.

This thesis aims to understand the relationship and position of the representations and warranties clause when used in contracts in Finland. This means that the thesis will begin by reviewing the representations clause in its original environment, common law countries. This understanding will be mirrored with the role the contract clause has taken in

[5] IACCM & Capgemini 2018.

the Finnish legal system, with final efforts going towards understanding what rules and principles could be seen to affect the use of the representations and warranties clause under Finnish contract law.

The second research problem tackles the other main reason for disruption of the legal field, technology. Through developing a basic understanding of artificial intelligence, machine learning and more specific technologies such as contract lifecycle management tools, this thesis aims to indicate the current capabilities of legal technology. Legal technology is already in use today, but little to no research has been done to understand the interplay between current legal practices and this new technology. This thesis begins the work on this research gap.

The two research problems detailed above will be combined to answer the ultimate research question of this thesis:

> What is the relationship between artificial intelligence based legal technology and the representations and warranties clause as understood under Finnish contract law?

This thesis aims to understand the aspects of the representations and warranties clause that effect the drafting capabilities of legal technology. If the method of study yields the intended results, a similar method could be adopted for other commonly used contract clauses. The research problem of this thesis has been kept very limited to allow an understanding of the chosen contract clause as well as room for garnering a general understanding of artificial intelligence.

In an ideal world further research would be able to synthesize how the representations and warranties clause, and other most commonly used contract clauses, could be drafted better and how this could be translated into use in legal technology. Regardless, an answer to the research question of this thesis will at least provide a starting point for similar research that must be conducted on the new legal world.

1.3. Research Method

Because the research question can be broken down into two main areas, 1) the representations and warranties clause and 2) legal technology, the research was also conducted and presented in two parts. To set the basic parameters for legal technology and the direction the answer to the research question could take, this thesis begins with an overview on legal technology.

Understanding the extent of the capabilities of artificial intelligence requires a brief look at the history of the technology. It is always easier to gauge how far something has come and how far it can go, when one understands the history behind it. Next this thesis looks into artificial intelligence and its sub-branch machine learning. It is especially important for this thesis to gain a widespread comprehension on basic terms such as artificial intelligence and machine learning to allow an understanding of the building blocks and possible limitations of legal technology. Lastly, the thesis examines the business needs that can be met by legal technology to manage contracts and the characteristics of the technology that meet these needs.

The first part of this research is conducted using leading literature for the topic. It is qualitative research aimed at gaining a basic understanding of a phenomenon, so that it can be attached to a legal concept. This thesis has been limited to a very basic overview of artificial intelligence and machine learning, because the main focus is still on the representations and warranties clause and the scope of the research needs to be respected.

The second part of the thesis, i.e. the representations and warranties clause, is conducted with a method that can be seen to be unconventional in the field of law. The main method of legal research belongs to the field of legal dogmatics, which in Nordic countries has two main attributes. The first of these is interpreting existing law and the second is systemizing that law.[6] This has usually resulted in contracts being researched as a whole through legal rules and principles, keeping research on single contract clauses minimal.

---

[6] Wilkman 2018:15.

In contrast, this thesis makes the conscious effort to change its view point and methodically strives to first understand the representations and warranties clause as it and then evaluate which legal concepts can be attached to it. The representations and warranties clause is first evaluated as an individual clause to establish its place within a contract in general. This is done by first seeing how the clause is used in its original common law and how it has been taken into use in civil law, predominantly Finland. From the practical use of the clause, this thesis identifies its different natures to allow some understanding of the different legal rules and principles that can be used to assess and evaluate it.

Finally, this thesis brings together these two very different concepts to understand their merging points, in positive and negative ways. After the research has been conducted, it will be possible to suggest different ways of taking the research forward.

1.4. Sources

This thesis has been conducted on a field of research that has so far seen little published works. For this reason, the research for this thesis has had to largely been based on well-known Finnish legal literature such as Wilhelmsson (2008), Hemmo & Hoppu (2006-) and different works by Saarnilehto. These works give a solid basis for the theoretical evaluation of the representations and warranties clause, but unfortunately are of little use when the element of legal technology is added to the research question.

Special commendations should be given to Wilkman (2018), one of the first doctoral dissertations to recognize the status of representations and warranties. Wilkman's dissertation serves as a source of validation and information for this thesis. This dissertation also does not aid in the discussion on legal technology and is in general, perhaps a bit focused on mergers and acquisitions.

With regard to the aspect of legal technology, the idea and basis for the theme of disruption in the legal field is based on Susskind's works through the decades. Understanding of artificial intelligence and machine learning relies heavily on literature, most notably

Bell (2014) and Shi (2011). Unfortunately, research on legal technology is limited, so this thesis has had to rely on sources only now reviewed academically, such as the market study conducted by the IACCM & Capgemini (2018) and Gallagher (2017).

1.5. Thesis Outline

Chapter 2 of this thesis will discuss the concept of legal technology. This will be done first by going through the shared history of technology and law and will continue by presenting two major concepts behind legal technology: artificial intelligence and machine learning. The discussion will continue with arguments promoting the use of legal technology in the contract management of businesses. Chapter 2 will end with a short study of legal technology tools that are used today.

Chapter 3 will present the representations and warranties clause starting with its use in common law countries, specifically the United Kingdom and the United States, and continuing with its use in Nordic countries, specifically Finland. Based on these findings, the representations and warranties clause will be broken down into different characteristics that can be understood to describe its nature in Chapter 3. Chapter 3 will finish with a discussion on the tools of the Finnish legal system that can be used to evaluate the use of the representations and warranties clause.

Chapter 4 will use the different characteristics of the representations and warranties clause to discuss the different points related to using artificial intelligence based legal technology to draft contracts with representations and warranties. The discussion will use the framework built in Chapter 3 to consider the theoretical implications of using legal technology in conjunction with the representations and warranties clause in Finland. Chapter 5 will comment on the thesis's main findings and discuss ideas for further research.

2. LEGAL TECHNOLOGY

2.1. The Path of Technology in Law

As early as in 1962 Robert A. Wilson suggested that due to their effective data processing capabilities, computers would contribute to changing the work of legal professionals. Wilson wrote of systems that would work as tools to aid searching for, going through and analyzing case law and legal precedents. The thought originated from Wilson's observation that conducting legal research was a substantial expense in the work of lawyers, with only a marginal percentage of the time spent being of any significant use. Making use of the data processing capabilities of computers for legal research would lessen the use of a professional's expensive time.[7]

In the 1980s, Richard Susskind continued the conversation on technology's role in the legal world. He wrote of the first proper implementations of technology in law firms through the use of database systems. These systems were designed to retrieve and filter pre-saved legal information. Susskind defined these particulars systems as tools that could at most save and filter substantive law. In its early forms, database systems still had many weaknesses, especially concerning the functionalities and relevance of search operations.[8]

From Susskind's older works it becomes evident that there were many different opinions on how technology should be employed in law. One school wanted to improve the current database systems in order to correct the search functionality and relevance problems. These knowledge-based systems would yield better and more versatile search results that would be relevant to the legal problem at hand. Another school wanted to focus technological development on more than merely search functionalities, as in their opinion search engines did not hold enough practical benefits for lawyers. Instead they wanted to transfer "lawyers' know-how" into a more accessible format.[9]

---

[7] Wilson 1962.
[8] Susskind 1989: 3-6.
[9] Susskind 1989: 6.

Both groups Susskind described wanted to evolve from legal information retrieval systems into better knowledge-based systems. The end results they were seeking were, however, different. With hindsight, it is now possible to say that both schools of thought were right, as systems are being designed for a multitude of reasons and functionalities. However, it must be pointed out that many of the systems being designed today are not being designed for lawyers at all, but for businesses and individuals with little formal legal education.

Today the legal field discusses the possibilities of artificial intelligence, robotics, automation, machine learning and block chain. For example, in Finland the courts are updating their information systems, law firms are developing their own software and chat-services are being used for public legal aid. All of these examples are possible through legal technology, or legal tech, which at its simplest definition is the use of technology to produce legal services.[10]

In less than 15 years, Finland has seen a great deal of progress in developing artificial intelligence for legal purposes. In 1993, Susskind observed that Finland was one of the least developed countries when considering the country's evolutionary path of AI and law. Susskind classed Finland as a Stage 1 country, one with "no sustained attempts to carry out serious scientific investigations into the topic". Comparatively, Sweden was classed as a Stage 4 country, where commercial exploitation was already being undergone in the same time period.[11]

Legal technology has warranted much discussion in the legal field. Susskind and many others believe that law is finally evolving and legal technology is one of the embodiments of this change. One of the leading factors driving change on the traditional approach is the cost of legal services. Susskind comments: "most legal and court services have indeed become unaffordable to their users, from consumers to global businesses". This is being addressed through the liberalization of the legal market (as in England and Australia), meaning that legal work is no longer the monopoly of lawyers. Legal processes are now

[10] Koulu 2017.
[11] Susskind 1993: 93-97.

being broken down and outsourced, with pressure to provide low-cost services. In addition, traditional views championing dispute resolution are being forced to give way to a new discipline: legal risk management. Through multi-disciplinary cooperation, the aim of legal services is to avoid disputes, with an integrated professional service.[12] Legal technology is helping lead the way for this changing profession, with benefits for both the users of legal services as well as the suppliers, who are able to focus their expert knowledge on less routine tasks.

2.2. Artificial Intelligence

2.2.1. History

Overpowering improvements in speed, memory capacity and communicative abilities have made today's computers into something that computer scientists could not have even dreamed of decades ago. Historically, computers were used for numerical calculations and in this time even programs that could understand the rules of chess were considered an achievement, no matter how poorly the programs actually played the game. Jumping forward in time, we now have computers that are able to challenge the best human players in the world.[13] In 1997, British artificial intelligence company Deep Blue beat the Chess World Champion Gary Kasparov. Nearly 20 years later in 2016, Google's AlphaGo artificial intelligence system beat 18-time Go World Champion Lee Sedol.[14] Both instances are considered historical and in their own way represent the astonishing capabilities of today's computers.

The idea behind the concept of artificial intelligence is said to have originated in the myths and legends of ancient times, where beings of artificial intelligence were spoken of. According to Pamela McCorduck artificial intelligence started as an ancient desire to create a god. References to the concept of intelligent machines have also been found in ancient Greek literature.[15]

---

[12] Susskind & Susskind 2015: 67-68.
[13] Parnas 2017.
[14] Vardi 2016.
[15] Tekoäly.info 2018.

Artificial intelligence, as it is now known, had its beginning at the University of Dartmouth in 1956. Researchers had a vision of a machine that was as intelligent as any human being. They predicted that this machine could exist within the time span of one generation and millions of dollars were donated to realize this vision. 20 years later, researchers realized just how much they had underestimated the difficulties associated with the artificial intelligence project and funding slowly dried up. This was followed by a 60-year cycle that always began with a step forward in the field of computer science and ended in failure for researchers and investors alike.[16]

During its short, yet tumultuous history, artificial intelligence has been given many kinds of definitions and classifications. These definitions are heavily influenced by history and it is still unclear how much they will evolve and change in the future. For the purpose of this research, different interpretations will be looked at.

2.2.2. Selected Definitions

Artificial intelligence has become a buzzword in today's society with normal people hearing it on almost a regular basis. The subject is constantly being discussed in the news and on social media, with everyone developing an opinion of their own. The term artificial intelligence does not have one right or wrong definition, and as stated earlier, it lives with the times and depends on what exactly is being discussed. For this reason, selected definitions are inspected, but a single representative definition will not be chosen.

Artificial intelligence (or AI) is a general term that is specific to a branch of computer sciences. The term is comprised of two individual words, artificial and intelligence. Artificial is an adjective defined in the Oxford dictionary as something "made or produced by human beings rather than occurring naturally, especially as a copy of something natural"[17]. Intelligence is a noun defined in the same dictionary as "the ability to acquire and apply knowledge and skills" and "the collection of information […] of value"[18]. The

[16] Cristianini 2016.
[17] Oxford Living Dictionaries 2018 a.
[18] Oxford Living Dictionaries 2018 b.

definitions for artificial intelligence given by computer scientists and other researches mimic these dictionary definitions.

A generally accepted definition for artificial intelligence is the synthetic mimicking, expanding and growing of human intelligence with the end goal of creating intelligent machines using science and technology. In 2005, John McCarthy noted that the long-term goal of this particular field of science was to create artificial intelligence that was on par with human intellect. This end goal in mind it is not surprising that AI research is interdisciplinary, including for example neuro- and cognitive sciences.[19]

Another definition was given by the Panel on Computer Science and Artificial Intelligence Staff in 1997. They stated:

> *"Artificial intelligence is the collection of computations that at any time make it possible to assist users to perceive, reason, and act. Since it is computations that make up AI, the functions of perceiving, reasoning, and acting can be accomplished under the control of the computational device (e.g. computers or robotics) in question."*

According to this definition, artificial intelligence is at minimum representations and the methods of representation of reality, cognition and information as well as vision and language. It also includes machine learning, robotics and virtual reality.[20]

The Panel also defined the term human-computer interface (HCI) in the same paper, to distinguish the human-component to these technological advances. Human-computer interface includes the integration of the machine to interpret and present data in a form that is convenient for the human operator. It also consists of the two-way communication of information between humans and computers, both powerful information processors.[21] This definition was of some interest, because the human-computer relationship was not encountered in texts on artificial intelligence often. This point of view as an addition to

[19] Shi 2011: 1-5.
[20] Panel O.C.S.A.A. 1997: 1.
[21] Panel O.C.S.A.A. 1997: 1-2.

artificial intelligence could be a significant one, especially when thinking of contracts as physical representations of agreements.

Another definition is that artificial intelligence is "a collection of several analytic tools that collectively attempt to imitate life".[22] This definition emphasizes the fact that AI is still a kit of tools that humans are using to imitate a very abstract concept, life. It also emphasizes the flexibility of AI, in that parts of the tool kit can be changed to better suit what kind of imitation is being sought after.

As seen in the definitions above, the study of artificial intelligence can be divided into a number of different branches. Researchers are striving to develop exceedingly intelligent machines for, for example:

- processing natural languages,
- understanding speech,
- identifying images and objects,
- learning from examples and precedents,
- automatic programing,
- training human users, and
- intelligent problem solving and justification.

In addition, researchers are working on building an intelligent robotic system to aid in research on the human mind. The system would be used to test hypotheses and models for human behavior. Especially this type of research is geared towards using artificial intelligence to learn more about human intelligence and thought processes.[23]

The aforementioned list is objectively speaking rather outdated, as it was made in 1989. By 2018, most fields have seen substantial advancements. Regular people carry with them mobile phones containing programs that can already understand, process and utilize users' speech, photos and GPS information.[24]

---

[22] Mohaghegh & Khazaeni 2011: 1.
[23] Susskind 1989: 8.
[24] The most natural example of this is Siri, familiar in Apple iPhones. With the phone's microphone, speakers and camera, Siri is able to answer questions and take orders from the phone's user. For example, the user can say "Hey Siri, wake me up at seven tomorrow" and the phone sets an alarm for seven o'clock the

2.3. Machine Learning

Machine learning has evolved over time to become one of the branches of artificial intelligence. The work of several pioneers in computer science have dictated the direction that this particular branch of AI has taken. They are especially Alan Turing, Arthur Samuel and Tom Mitchell.[25]

As a concept machine learning has existed since about the 1950s. This is when Alan Turing asked "can machines think?" in his research paper. Turing's research was based on the Imitation Game. The basic principles for the game are rather simple, as it only involves three parties. One human acts as the judge, another human is a game player and the third party/player is a computer. During the game the human judge communicates with the other two participants (the human and the computer) by typing into a terminal device. After the human and the computer both submit their answers, the judge has to choose which response was computer-generated. If the judge is systematically unable to distinguish between the human's and computer's answers, the computer wins the game. Today, the Imitation Game is still played annually in an artificial intelligence competition for the Loeber prize.[26]

In 1959, a definition for machine learning was given by Arthur Samuel. He defined machine learning as the field of science that gives computers the ability to learn without explicit programming. Samuel used games, mostly checkers, to teach computer programs to learn. His strategies were noted especially for being able to improve the costly memory performance of the programs.[27]

In 1997, Tom M. Mitchell defined machine learning in a different way and his definition is often used. According to Mitchell, "a computer program is said to learn from experience E with respect to some class of tasks T and performance measure P, if its

---

next day. Through a system update the user can also teach Siri new things, like how to pronounce a word or name in a different way. (Apple 2018.)

[25] Bell 2014: 1-2.

[26] Ibid.

[27] Bell 2014: 2.

performance at tasks in T, as measured by P, improves with the experience E". This definition gives a set of three factors to define machine learning with. There are task(s) (T), experience (E) and performance (P). This effectively means that a machine should see a performance increase from the experience of running a set of tasks.[28]

It is important to note that artificial intelligence and machine learning are not synonyms, even though they may be used as such in everyday language. Machine learning is only a part of the field of science that artificial intelligence is. In addition to machine learning, another subfield of artificial intelligence, blockchain has been seen to be able to create immense added value in legal technology. At the moment though blockchain has not reached as much of its potential as machine learning[29] and for this reason it is not further discussed in this study.

2.4. Why Combine Technology and Contracts?

It is universally known in the business world that without risk there is very little room for opportunities or profit. For this reason, businesses spend great amounts of time and money on processes that help them understand the risks they face and control them to the best possible degree. As with any other part of the business, such as finances and supply chains, contracts also need to be managed. There are risks to be found throughout the contract life cycle, from negotiations to fulfillment, which need to be addressed in order to avoid not only the more obvious repercussions of violations of law, but also leakages in expenses and missed revenue opportunities.[30]

Gallagher has identified five weak points in the contract life cycle to understand "where risk is most likely to be introduced into the process". The first of these weak points is performance. Organizations must be aware of the different contractual obligations they have in order to manage their risks. It is not unusual for different reports or services to be

[28] Bell 2014: 2.
[29] IACCM & Capgemini 2018.
[30] Gallagher 2017.

delivered at specific times, a failure to track and fulfill the agreed upon things have consequences not only in the form of penalties but on the business relationship as a whole. The second weak point of the contract life cycle is the automated renewal of contracts. Automated renewal processes are considered to be economic in that they save time and manual work. There are still risks associated with these processes, especially when the organization relies on automation too much. In these cases, the organization may renew contracts that they no longer need or miss the possibility to renegotiate some contracts to be better.[31]

The third weak point in the contract life cycle that Gallagher identifies is unapproved contracts. If a contract is sent onward without the proper approval processes, there can be significant costs later down the road. The fourth weak point is compliance. Contracts may have certain requirements, for example to make sure that organizations involved have certain types of insurance. When these requirements are overlooked, the organization is exposed to risk because of its internal controls. The last weak point in the contract life cycle is the inability to access contracts with overlapping terms. Many organizations reuse the same clauses in numerous contracts and when for any reason, all their contracts containing a certain clause need to be reviewed, they lack a clear system. This puts them at a significant disadvantage.[32] Especially from the point of view of this thesis, the last weak point mentioned by Gallagher is of interest. The representations and warranties clause can often be recycled from contract to contract, which leaves room for risk.

Gallagher also identifies two steps to reduce the risk in the contract life cycle. The first is to establish a contract management plan. This process should not only be the responsibility of contract managers and lawyers, but of all possible stakeholders. After producing a plan that will also periodically be reviewed and redone, Gallagher recommends the use of contract lifecycle management tools to help mitigate the risks identified in the plan. Robust contract lifecycle management tools are able to target all five weak points in the

[31] Gallagher 2017.
[32] Ibid.

contract life cycle through automated events, reminders, search capabilities, trackers, analytics and workflows.[33]

Susskind also describes two more general key benefits to using legal technology. The first of these is from the human resource perspective. Susskind believes that using technology allows the more effective and efficient distribution of human knowledge and expertise, improving the way human resources are managed. Tasks that used to require an expert to complete can, through the use of legal technology, be given to less experienced persons. Not only does this benefit the experts, but the actual users of the technology are given access to insight and knowledge, which has previously been hidden from them. In addition, the knowledge and expertise of many experts can be preserved through the development of legal technology, less silent knowledge will be lost. Secondly, Susskind states that legal technology systems "enhance the quality of legal work". Scarce legal expertise is preserved and made more widely available, which codifies that knowledge. Technology then promotes uniform approaches to similar problems and "an in-built quality control regime". The possibilities for human error are also reduced, because computer systems do not experience good and bad days.[34]

2.5. The Current State of Legal Technology

Discussion on using technology, machine learning and AI to advance the field of contract law in particular has generally led to technology called contract lifecycle management tools. These tools are one component of legal technology; much like machine learning is only a part of artificial intelligence. Legal technology also includes the production of legal information banks (like the Finnish Finlex), using chat-services to expand the availability of legal aid and creating the possibility for electronic court practices.[35] For the purposes of this research, especially contract lifecycle management tools will be discussed.

---

[33] Gallagher 2017.
[34] Susskind 1993: 101-102.
[35] Koulu 2017.

So far though there seems to be a division between the end-users of the software and the technology vendors. For example, the International Association for Contract and Commercial Management (later in this chapter also the Association) reported in 2017 that almost 85% of the companies using contract lifecycle management tools were unhappy with their chosen solution or solutions. The Association in collaboration with Capgemini consulting believes that only within the last few years has technology begun to reach a state that can handle the complex nature of the contracting process.[36]

Together with Capgemini, the Association conducted an analysis on the current state of contract lifecycle management tool technologies. They mapped out over 200 vendors to which they sent out a self-assessment survey. More than 130 vendors answered the survey with information about their tool's capabilities in accordance with criteria set forth by the Association and Capgemini. These criteria are a mix of what they consider to be basic requirements along with some niche capabilities. They also observed that technologies such as block chain are making strong progress in the contract lifecycle management technologies market, but it is still too early to consider them basic requirements for most vendors.[37]

In the Automation Report published in 2018, the Association and Capgemini recognized 14 different key capabilities of contract lifecycle management tools[38]. They can be seen in Table 1 with the criteria set for the survey.

[36] IACCM & Capgemini 2018.
[37] Ibid.
[38] Ibid.

Table 1. Key Capabilities of Contract Lifecycle Management Tools (IACCM & Capgemini 2018).

Capability	**Criteria**
Contract Drafting	*Clause Library:* creating, modifying and adding clauses to the library *Template Library:* creating, modifying and adding templates to the library *3rd Party Templates*: transforming 3rd party templates into a contract, comparing them with internal standards, etc. *Contract Negotiations:* redlining, tracking, workflows, version control and collaboration *Others:* The need for other tools (i.e. Microsoft Word etc.) to edit clauses or templates? Options for e-signature?
Contract Approvals	*Workflow:* creating workflows, assigning approvers and set conditions based on different values, types or other criteria, and configuration process *Workflow reporting:* status, outcome timing in system *E-Signature:* supported types, approval via mobile, ease of signing and registering *Others:* Can approvers edit the contract object?
Contract Query	*Questions:* creating, assigning, storing questions and automation around this *Configuration of Questions:* flexibility to create paths (one size fits all vs. as per individual contract) *Queue Management:* speed, reporting and notifications once answered *Others:* FAQs and chatbot availability
Contract Discovery	*Basic Search*: Connection to repository, search and copy basics, languages that are supported *Contract Classification:* contract types, groupings and connections *New and Sub-Repository Creation:* Can documents be easily or automatically grouped and clustered? How?
Obligation Management	*Obligation Extraction:* automatic vs. manual, categorization, classification, owner assignment and management *Notifications:* configuration, automation, interface with email, calendaring *Compliance Tracking:* reporting, collection and storage of response, automation, RAG reporting *Others:* flexibility in types of notifications and escalations
Document Repository	*Structure:* creating different types of files, folders, hierarchies and then uploading/downloading, and document previewing *Metadata and Tagging:* flexibility and introduction of automation *Version Control:* signed/unsigned/WIP and notification of downloads *Others:* OCR options, file types

Dispute Management	*Dispute Log/List Management:* action owners, link to parent contract, document storage *Approval Workflow*: internal organization, collaboration, track/trace *Reporting:* status, days, flexibility on other factors, report sharing
Performance Management & Calculations	*SLA Data:* uploads/links, comparison and calculation against contract standards *Automation & Notification:* options for triggering earn backs or highlighting risks *Invoice Calculations:* integration with other tools, comparison with standard invoice, discrepancies
Contract Change Management	*Drafting:* use of existing templates, clauses, documents *Links:* connections to contracts and exhibitions *Workflows and Approvals:* flexibility, reportability *Signature:* signature options and modules *Metadata/Tagging:* does the change order get incorporated into the exiting metadata/tagging process? *Due Diligence and Review:* what automation does the tool offer to compare the proposed change to existing clauses?
Contract Information Extract / Machine Learning	*Metadata/Data Point Extraction:* loading of contracts and detail around point extractions *Obligation Extraction:* ability to identify obligations within contracts *Bulked Contract Classifications:* ability to group large number of contracts into defined types *Machine Learning:* how can the tool "learn" in the above to increase accuracy?
Collaboration with Counter Parties	*Portals:* vendor/customer/partner portals *Approvals:* ability to ask partners for approval/rejection in a transparent manner *Signature:* integration to allow for finalization
RFX	*Interaction:* uploads from partners and query management *Notifications:* automation option vs. manual *Others:* reverse auction capabilities Creation of RFX from template Workflows and partner sharing
Management Reporting	*Basic Reporting:* format, drill down and graphics *Special Reports:* ease of configuration and then format, drill down and graphics *Others:* scheduling of reports, use of external tools on reporting
Contract Portfolio Analysis	*Analysis:* analyzing different user defined factors in a portfolio such as spend, risk or other defined categories Benchmarking against standards Score-carding (as defined by user) *Technical Aspect:* exporting, graphics, reporting

These 14 capabilities are specific to how technology can be manipulated to contract-specific needs. Even more important to this study is which capabilities are specific to contract clauses. The most obvious of the clause-specific capabilities is the drafting of the actual contract. Not only are these tools able to help create a library of clauses, with different options for different scenarios, it is also capable of processing third-party contracts and comparing them to internal ones. Using case-specific parameters it should be possible to have the artificial intelligence recommend the use of one version of a clause over another. In this process it would seem natural that a clause that seems to have the same underlying principles and objectives that are independent of the contract drafter, would be better suited to the technology.

In addition to contract drafting, my view is that capabilities such as contract query, discovery, obligation management, contract change management and contract portfolio analysis are also heavily linked to specific contract clauses.

3. THE REPRESENTATIONS AND WARRANTIES CLAUSE

3.1. Definitions

To understand the use, nature and evaluation of the R&W-clause, it is important to understand the background of the clause itself. Understanding the meaning behind the name of the clause, already gives some insight into how its use can be understood.

The Oxford Living Dictionary gives three definitions for the noun *representation*. These are:

1. "The action of speaking or acting on behalf of someone or the state of being represented"
2. "The description or portrayal of someone or something in a particular way"
3. "Formal statements made to an authority, especially so as to communicate an opinion or register a protest"

The dictionary also states that the word's origin is from Old French or Latin to mean "bring before, exhibit".[39]

The word representation can also be seen to come from the verb *to represent*. The dictionary definitions for the verb are:

1. "Be entitled or appointed to act or speak for (someone), especially in an official capacity"
2. "Constitute; amount to"
3. "State or point out clearly; allege; claim".[40]

Both definitions refer to similar themes. First, both definitions consider representation as the state of having the right to act on behalf of someone else. Second, the noun and the verb both refer to alleging, making statements or describing something in a certain way.

---

[39] Oxford Living Dictionaries 2018 c.
[40] Oxford Living Dictionaries 2018 d.

The same dictionary defines the noun *warranty* as "[a] written guarantee, issued to the purchaser of an article by its manufacturer, promising to repair or replace if necessary within a specific period of time" and "[j]ustification or grounds for an action or belief"[41]. As with representation, the word warranties can also be understood as the verb *to warrant*. To warrant is defined as to "[j]ustify or necessitate (a course of action)" or "[o]fficially affirm or guarantee"[42]. Definitions for both the noun and the verb refer to guarantees and justifications.

Combining these definitions indicates that the representations and warranties clause is meant to allege and make statements in an officially guaranteed way. According to the dictionary definitions, the clause can also state the right to act on behalf of someone else or act as justification for a certain course of action.

3.2. Representations and Warranties in Use

3.2.1. In Common Law

Adams states that in contracts written in the English language, the words "represents" and/or "warrants" are generally used to present statements of facts by the contract parties. These statements usually relate to matters that the contracting parties are able to broadly control or which fall within the scope of their operations. For example, in the United States, Adams was able to determine that in 106 M&A contracts all the contracts used some form of the clause.[43]

In his commentary on the use of R&W-clauses in project agreements, Walters indicates that the common law system has two different views on the use of the clause. The first school of thought views that over time, when used in reference to a statement of a fact, the customary use of the phrase "representations and warranties" has merged the two

[41] Oxford Living Dictionaries 2018 e.
[42] Oxford Living Dictionaries 2018 f.
[43] Adams 2015.

separate terms into a single concept. As such, there is no meaning behind the term warranty from a consequential point of view when used in the same phrase with the word representation. This means, that when a representation, or a statement of a past or currently existing fact, is made in the clause and subsequently proven false, a tort claim for misrepresentations could be made. In this school's opinion, a breach in warranty cannot exist, because it is in essence part of the representation.[44]

The other school of thought, according to Walters, views that there is a significant difference between representations and warranties, meaning there are also different consequences for breaching them. Both schools of thought agree that the consequence for a breach in contractual representations give the injured party room for a tort claim for misrepresentation, as stated above. The remedies for misrepresentation are theoretically quite easy to anticipate and include rescinding the contract and suing for restitutions or reaffirming the contract and suing for damages.[45]

The second school has differing views on what a warranty is and how a breach of warranty is treated when it relates to the assertion of fact. They define warranty as a promise that the asserted fact is true both now and, in the future[46]. The second school holds that the purpose of the warranty is to relieve the receiving party from the burden of having to determine whether or not the fact is true. The remedy for a breach of warranty rarely includes rescinding the contract, but it does usually mean that the injured party is to be given the benefit of its bargain.[47]

Adams also supports this claim of two different schools of thought. According to his research, it is predominantly the American courts and practitioners that do not differentiate between "represent" and "warrant". Adams says that in contrast, the English courts, practitioners and commentators all accept the view that the terms have implications for

[44] Walters 2009.
[45] Ibid.
[46] It is important to note that Walters is the only one to define warranty through something that is true in the present and in the future. This conflicts with for example Wilkman's research where warranties are specifically for things that are true at the moment of the contract (Wilkman 2018: 162).
[47] Walters 2009.

differing remedies. “Represents” permits tort remedies for misrepresentation and “warrants” permits contract remedies for breach of warranty.[48]

In research on the interpretation of share and business acquisition contracts, Wilkman studies the nature of conditions, warranties and representations as individual contractual terms. She finds that under English law, conditions have traditionally been held as the more important terms in a contract. This is mainly due to the fact that a breach in conditions may lead to both damages and the right to terminate the contract, while a breach of warranty may only lead to the former. Under US law on the other hand, warranties and conditions are not categorized in the same way, meaning one is not perceived to be more important than the other. As such, limitations on available warranties are also not systematically associated with warranties in the US.[49]

On representations, Wilkman points out that in common law the elements of the legal concept are usually derived from its counterpart, misrepresentation. This is due to the fact that any legal remedies rely on the representation being untrue. Under English law, it said that a representation should be given explicitly, but that half-truths and marked silence can also be seen as misrepresentations. Under US law, the American Restatement of Torts (Second) has a definition and remedies for misrepresentations, but does not do the same for representations. Wilkman also refers to the difference between states in the US. The contents of representations (as well as warranties) are set out in case law, which affords much variance between states.[50]

As contractual terms, Wilkman states that under common law representations included as express terms are predominantly regarded as warranties. That is not to say that remedies for misrepresentations are excluded. Under English law, the Misrepresentation Act 1967 remedies for misrepresentation are possible independent of what the actual contract term has been named. In the US where there is no Act to govern representations incorporated into contract, remedies for misrepresentation are not precluded either, but the extent of

[48] Adams 2015.
[49] Wilkman 2018: 161-163.
[50] Wilkman 2018: 166-169.

the affect this will have on the contract depends on the state law that governs the contract.[51]

From the American point of view, Adams indicates that most practicing lawyers use the R&W-clause out of familiarity. Most of the time, they do not make a conscious decision to belong to one school of thought or another, but rather resort to the clause as a force of habit. Transactional lawyers are content to understand the representations and warranties clause as simply meaning that a party is asserting the stated facts. Adams goes on to state that this lack of interest could be due to the clause's M&A origin, where contracts usually specify indemnification as the exclusive remedy, thus making the debate more or less moot.[52]

It seems to be the general idea that the representations and warranties clause is predominantly from mergers and acquisitions contracts[53]. If the clause were to spread more into other contract types as well, the purpose for the representations and warranties clause could be watered down into something merely as simple as stating facts. As it is though, the clause seems to have a conflicting position in common law. First, the clause is almost a standard clause used in most mergers and acquisitions contracts. On the other hand, the content of the clause would need to be very specific to the transaction in question. This conflict could also have some bearing on how the clause is interpreted under Finnish contract law.

3.2.2. Under Finnish Law

According to Kurkela, the representations and warranties clause was born in the mergers and acquisitions (M&A) market in common law countries, simply, to convey the *essentialia negotii* of a contract. Over time the clause became a fixed part of all M&A contracts and slowly spread to other types of finance contracts as well. As the M&A market

[51] Wilkman 2018: 169-171.
[52] Adams 2015.
[53] See for example Kurkela 2013, Adams 2015 and Coates 2015.

globalized and the predominant language used in M&A contracting stayed as English, the use of the representations and warranties clause also migrated to civil law countries.[54]

In her research, Wilkman states that warranties as a distinct group of contractual terms are not categorized in Nordic countries. There are also no general rules or enacted legislation concerning them, which she also points out means that warranties are not necessarily seen as less important contract terms, as in English law. Wilkman links the Nordic Sale of Goods Act to warranties, as it includes provisions on 'specific undertakings' which are connected to the available remedies in the case of their breach. Traditionally specific undertakings have been linked to defining that a good is defective when it differs from what the seller has specifically undertaken. Explicit warranties that have been included in the written contract should, according to Wilkman's research, be regarded as specific undertakings. This is due to the fact that through warranties, the seller is specifically warranting "that certain facts are true and correct" and in that way are giving a binding commitment. Most importantly though Wilkman emphasizes that contracts governed by Nordic law are steered more by general interpretation methods. The consequences of a warranty are not clear based on just the indications of the name, but rather will be dependent on the contents of the term in context with the whole contract.[55]

Concerning representations under Nordic law, Wilkman showed that "there is no direct equivalent concept of representations and specific consequences if they amount to misrepresentations as understood by English or US law". In her research, Wilkman also commented that in Nordic countries representations may also be described as giving information on relevant facts.[56] Understanding the representations and warranties clause as a tool to share information between contract parties is an interesting point of view. This would mean that the content of the clause would be interpreted with an array of rules and principles important to Nordic law in guiding the disclosure of information as well as obligations born out of loyalty between contract parties[57].

---

[54] Kurkela 2013.
[55] Wilkman 2018: 164-166.
[56] Wilkman 2018: 171.
[57] Ibid.

Finnish literature also refers to the representations and warranties clause. For example, the clause is referred to by its English name when introducing the concept of liability limitation clauses in acquisition agreements. In this context representations and warranties may mean the seller's statements about the company's condition, for example, that the stock is being legally held and sold by the seller, the company's accounting has been conducted according to law or that the company has no on-going legal disputes. Limiting liabilities is a clear indication of controlling and limiting risks associated with contracts, in this particular case risks associated with acquisitions.[58] This also supports the idea that the representations and warranties clause is a tool for information sharing, with the goal of mitigating risks associated with one-sided information. In the case of a dispute, it is better for parties to openly demonstrate that they have given all necessary information.

The general consensus seems to be that the representations and warranties clause is used in civil law countries, including Finland, much in the same way as in common law countries. The clause is even referred to by its original, English name in literature. What obviously differs is the way the clause can be interpreted in dispute situations. While common law seems to have more clause-specific interpretations, even though they may be conflicting, Finnish contract law would evaluate its use on a contract-by-contract basis according to rules and principles associated with business relationships and contract law.

[58] Carlsson, Fogelholm, Herler, Krook, Lindqvist, Merikalla-Teir, Syrjänen, Tuominen, von Weissenberg 2014: 30.

4. NATURE AND EVALUATION OF REPRESENTATIONS AND WARRANTIES

4.1. Representations and Warranties: A Standard Clause

4.1.1. The Nature of a Standard Clause

If, under Finnish law, the representations and warranties clause is thought to also have a conflicting nature, this would affect the way the clause is interpreted in the case of disputes. This depends on whether or not the representations and warranties can be seen as being a standard clause in Finnish contract law. The repetitive use of the clause's English name would point to the representations and warranties clause being a standard clause at least to some degree.

Hemmo and Hoppu differentiate between standard contracts and standard clauses. A standard contract uses only standard clauses, while standard clauses may be used in a variety of otherwise very personalized contracts. Usually standard clauses mean contractual conditions that are meant to be used as is in a number of separate contracts between different contracting parties.[59]

Wilhelmsson gives three different criteria for defining what a standard clause is. First, standard clauses are drafted for use in a number of individual contracts. Second, standard clauses are drafted with future possible use in mind. This means that they are not drafted for a specific contract and its concrete needs. Third, standard clauses are meant to be used with any number of contractual partners.[60]

According to these definitions, whether representations and warranties can be considered a standard clause depends on the drafting party and how they use the clause. Usually, representations and warranties in a more basic form should be transferrable from contract to contract. A basic representation and warranty could be for example "the Seller

[59] Hemmo & Hoppu 2006-.
[60] Wilhelmsson 2008: 36.

represents and warrants that the company has no on-going legal disputes". This specific wording does not require modification or customization and could be copy-pasted from one contract to another. When used this way, representations and warranties could be considered to be standard clauses.

Standard clauses may be categorized by the way they have been drafted. The first category of standard clauses is those that have been single-handedly drafted by only one of the parties. These may be drafted by a certain company or by an industry association, in the case of the latter they need to also be approved by the consumer authorities or industry supervisory authorities in Finland. The second category of standard clauses is those that have been drafted between the two parties or their representatives. These may also be called "agreed documents".[61]

In the case of representations and warranties, it is unlikely that the standard versions of the clauses are drafted by industry associations as opposed to individual companies or the lawyers they have employed. In business-to-business dealings it would be logical for representations and warranties to be drafted either single-handedly by one party or jointly by both parties that are involved. In the case that the clauses are drafted together, representations and warranties clauses may also be referred to as agreed documents in the contract.

On the other hand, the amount of negotiating that goes into the representations and warranties a contractual party makes[62], would suggest that the clause has very little standard qualities. Representing facts in a very precise manner limits to what extent the representations and warranties clauses may be called standard. According to Wilhelmsson, one of the key criteria is that standard clauses are not drafted with a single contract in mind. Company specific facts that are being represented or warranted clearly do not meet this criterion.

In addition, it must be remembered that the origin of the representations and warranties clauses is in the field of mergers and acquisitions. It is also unlikely that contracts with

[61] Hemmo & Hoppu 2006-.
[62] See e.g. Wilkman 2018.

so much monetary value mostly contain general statements. In essence, this means that without access to these contracts it is difficult to say the extent of the standardization of the representations and warranties clauses in practice.

On the other hand, for example Wilhelmsson seems to allow for some flexibility in the definition of standard clauses. He states that in practice standard clauses can be different in both nature and scope. The classic idea that standard clauses are printed or otherwise multiplied through copies has changed as technology has changed. In some cases, it has been enough to show that the clauses were prepared in advance to define them as standard clauses.[63]

Generally, it is understood that for example finance contracts are drafted after a company's due diligence process and initial non-disclosure agreements have been agreed to. After this, contract drafting and negotiations usually begin. If there are certain representations or warranties that one party wants to be sure of, it would make sense for them to draft them in parallel with the due diligence process or to have them ready when negotiations begin.[64] In this scenario the representations and warranties, depending on the wording used, could be considered to be standard clauses, as suggested by Wilhelmsson.

The position of representations and warranties as standard clauses is clearly a question that does not have one clear answer. Theory found in literature for defining a standard clause could support representations and warranties being considered as standard clauses. However, this is dependent on the drafting party, the wording of the clauses and the period of time in which the drafting is done.

4.1.2. Evaluation of Representations and Warranties as Standard Clauses

Under Finnish contract law, the evaluation of standard clauses is multi-faceted. A number of different circumstances affect the interpretation and evaluation of standard clauses in an individual contract. One big question is, for example, whether the contract is between

[63] Wilhelmsson 2008: 36.
[64] Frankel & Forman 2017.

two Finnish entities or if there are international parties involved. This automatically raises the question of governing law and the place of dispute resolution.[65]

So far there are few clear ruling principles for the evaluation of standard clauses and Wilhelmsson points out that in many cases the question of the binding effect of standard clauses is dependent of the *in casu* solution. Nevertheless, there are a few characteristics of the standard clause that Wilhemsson names as important for the evaluation of the binding effect of such clauses.[66]

One of the relevant characteristics to look at is the content of the standard clause. The more unbalanced these terms are for the benefit of their user, the higher the requirements for making them binding on the counterparty. The boundary of this principle is a specific doctrine, according to which the binding effect of surprising and severe (in Finnish *yllättävät ja ankarat ehdot*) standard clauses can be limited. Especially Finnish doctrine has generally accepted an additional condition for the use of severe and surprising contract clauses. The party using the clause should make special note of it for their counterparty[67], if the clause is unfamiliar to them.[68] It is unlikely for surprising or severe terms to be found in representations or warranties, as these are facts or statements that the contract parties give themselves. This characteristic could be more relevant in terms of the penalties decided in contracts that are connected to the representations and warranties.

Another characteristic to be considered when evaluating the binding nature of standard clauses is the quality of the clauses in question. By quality Wilhelmsson means, who or which entity originally drafted the clauses. According to Wilhelmsson, it is easier to accept the use of standard clauses that have been drafted together with both parties[69] in contrast to terms that have been drafted one-sidedly.[70] Especially in acquisition or merger contracts representations and warranties seem to be drafted in cooperation between the

---

[65] Wilhelmsson 2008: 58.
[66] Wilhelmsson 2008: 67.
[67] This can also be thought of as meeting the information disclosure agreement (Saarnilehto 2000: 124), which is more thoroughly discussed in the previous chapter.
[68] Wilhelmsson 2008: 67, 92.
[69] These types of standard clauses may also be referred to as agreed documents.
[70] Wilhelmsson 2008: 67.

contract parties. This would suggest that in the case representations and warranties are considered standard clauses, they would also be evaluated as terms drafted together instead of as terms simply handed from one contract party to the other.

The effect general contract principles have on the binding quality of standard clauses also depend on who the counterparty for the contract is. If the counterparty can be considered a professional and well resourced, they can be expected to understand the weight of their decisions in more complex scenarios. As such, these types of contract parties are more likely to be held accountable for standard clauses they have agreed to. When the other party is significantly weaker in terms of knowledge and resources, more consideration will be given to the amount of information given to them concerning the standard clauses.[71]

In business-to-business contracts, it is more likely for the contract parties to be considered to be on equal footing. Finnish doctrine gives more emphasis to situations where the contract relationship is between a trader and a consumer, because the latter is seen to have a significantly weaker position[72]. Representations and warranties in the context of this thesis are used in contracts between businesses, this means the general assumption is that contract parties are at least theoretically on the same level. Realistically though, one party is probably weaker than the other in terms of experience, knowledge and resources. How much bearing this has when evaluating representations and warranties depends on the other particulars of the case as well as the evaluating party.

Wilhelmsson also makes the point that when evaluating contract clauses, it is rarely an "all or nothing" situation. In some cases, it is the best decision to keep some standard clauses in a contract binding the way they are, while releasing contract parties from the rest. This may even manifest in a way where the counterparty is released from severe responsibilities defined in the standard clauses, but is allowed to rely on an advantage the same clauses afford them.[73]

---

[71] Wilhelmsson 2008:67-68.
[72] Wilhelmsson 2008: 68.
[73] Ibid.

Saarnilehto comments that in the case of standard clauses, mediation[74], used to bring more balance to unfair clauses, is only used when they are binding to both parties (clearly part of the contract) and valid (information disclosure obligations have been met)[75]. Otherwise, as in the case of severe or surprising terms, the focus of evaluation is on whether or not the clauses are binding at all. Evaluation is done with the same criteria in both cases, but the end result differs.[76] From the perspective of drafting representations and warranties, these points emphasize more just how open to interpretation unclear standard clauses may be.

4.2. Representations and Warranties: Source of Information

4.2.1. The Nature of Information Sharing in Representations and Warranties

One definition for the representations and warranties clause has been the stating of facts in the contract. It could be argued that the process of stating facts is akin to supplying the other contract party with information. In this way, the representations and warranties clause may also be understood to fill the role of providing information in a contractual relationship.[77]

The representations and warranties clause states facts, or expresses information important to the contract. One of the leading principles in Finnish contract law is that of the loyalty obligation and its derivative the obligation to disclose information. Contract parties are obligated, under the Finnish legal system, to take into consideration the interests of their counterparty, to the extent that this does not unreasonably endanger their own interests.[78] Disclosing important information in a traceable way through the representations and warranties clause would seem to take this principle into account.

---

[74] The word mediation has many definitions, some which are understood more in the meaning of arbitration etc. In this case however, it is used as a translation for the Finnish word *sovittelu*, which means to adjust contract clauses after the contract has been in force, usually with an aim of correcting an imbalance or severe contract term(s).
[75] Saarnilehto 2000: 124.
[76] Saarnilehto 2000: 123.
[77] See e.g. Wilkman2018.g
[78] Saarnilehto, Annola, Hemmo, Karhu, Kartio, Tammi-Salminen, Tolonen, Tuomisto & Viljanen 2019.

Nowhere in the research or legal precedents on the loyalty obligation or obligation to disclose information is it stated that compliance with these principles needs to be done in writing or that it must be stated in the contract itself. As this is not prohibited either, the representations and warranties clause in contracts may also be seen as physically expressing these principles.

In addition, as discovered earlier, the clause issues promise that at the very least the information provided is true with regard to the present and the near future. The loyalty obligation is supposed to highlight the nature of co-operation of the contractual relationship[79]. Merely stating information can be seen to fulfill the loyalty obligation to an extent, but backing these statements with possibility of indemnifications can be seen as "putting your money where your mouth is". For a contract party to give information in writing, in the contract itself while making itself liable could be construed as building trust in the contractual relationship and fulfilling obligations born from Finnish contract law principles.

4.2.2. Evaluation of Information Sharing Through the Loyalty Obligation

The loyalty obligation (in Finnish *lojaliteettivelvollisuus*) is an important part of Finnish law principles. It underlines the idea that a contract is the result of co-operation between equal parties, before all else, parties with equal information. Neglecting to adhere to the obligations of loyalty in a contract may be seen as a limited breach in contract.[80]

The loyalty obligation may be understood as the obligation to take into consideration the interests of the counterparty, to the extent that this does not unreasonably endanger your own interests. According to Mähönen in Saarnilehto et al. it may also be understood to encompass all the other obligations and responsibilities that one contract party may have towards the other.[81] One interpretation of these obligations can be derived from section 33 of the Finnish Contracts Act (228/1929): "A transaction that would otherwise be

[79] Saarnilehto et al. 2019.
[80] Ibid.
[81] Ibid.

binding shall not be enforceable if it was entered into under circumstances that would make it incompatible with honour and good faith for anyone knowing of those circumstances to invoke the transaction and the person to whom the transaction was directed must be presumed to have known of the circumstances". The law clearly speaks of circumstances that are against both honor and good faith, giving an important frame for all contractual relationships.

According to Mähönen, the loyalty obligation may also be understood to include other responsibilities that contracting parties have towards each other, such as information disclosure requirements (in Finnish *tiedonantovelvollisuus*), the contribution obligation (in Finnish *myötävaikutusvelvollisuus*) and the obligation to give notice of a defect through reclamation (in Finnish *reklamaatiovelvollisuus*). How these special responsibilities are emphasized depends on the contract type and relationship.[82]

Information disclosure and discovery requirements and obligations (in Finnish *tiedonanto- ja selonottovelvollisuus*) can be understood to be a special responsibility derived from the loyalty obligation. Mähönen describes this as the contracting parties' obligations to provide information concerning the contract to their counterparty both before an agreement has been reached and during the contractual relationship. He also states that the disclosure obligation is more concrete than the loyalty obligation, because it requires actual movement of information from the contract party with a superior knowledge-based position to the other party.[83] Saarnilehto states that the information disclosure obligation is also heavily linked to the evaluation of contract clauses as binding/not binding based on the doctrine of surprising or severe contract terms[84].[85]

According to Mähönen, unlike the loyalty obligation, the disclosure obligation is less of a general obligation and mostly dependent on the contract type in question. When defined in this way, Mähönen states that the disclosure obligation is an obligation to provide specific information to the other party only when it is explicitly stated in statutory law, case-

[82] Saarnilehto et al. 2019.
[83] Ibid.
[84] This doctrine is discussed in more detail under later in the thesis.
[85] Saarnilehto 2000: 123.

law or the terms and conditions within a contract. From a statutory perspective, the disclosure obligation is defined only in the Act on Guaranties and Third-Party Pledges (361/1999), the Insurance Contracts Act (543/1994) and the Consumer Protection Act (38/1978). In all other cases, the situation should, according to Mähönen, be evaluated from the perspective of the loyalty obligation.[86]

Without specific information on the nature of the contractual relationship, it is difficult to evaluate the true use of the representations and warranties clause as an embodiment of the loyalty (and disclosure) obligations. On the surface, it can seem like the other contract party has been duly informed of all necessary aspects related to the contract, because a great deal of information may be found in the representations and warranties clause. However, the clause does not always reflect the information that has not been disclosed or even discovered.

As it has been stated that the disclosure obligation is dependent on the type of contract in question, it may be understood that the representations and warranties clause is less concerned with the disclosure obligation as it is with the loyalty obligation.

4.3. Representations and Warranties: Limiting Liability

4.3.1. The Nature of Liability Limitations

One understanding of contracts is that their role is to make relationships clearer and help mitigate any problems or risks that might arise during those relationships. Although there are many that would say that a more proactive and positive approach to contracts would benefit business relationships more[87], current practitioners seem to favor a more classical approach to contracting. This includes limiting the liabilities of a contractual relationship to an acceptable degree, usually through explicit terms and conditions in contracts.

[86] Saarnilehto et al 2019.
[87] See for example Haapio 2013.

Carlsson et al. discuss the limiting of liabilities in contracts. Generally, businesses aim to limit their risk in regard to indirect damages, but they may also try to limit their liability by agreeing to a fixed euro-based limit for contractual damages. Maximum liability can also be tied to the contract's performance value (e.g. 10% of the total cost of performed services). In addition to the "actual" terms for liability limitation, it is possible to contractually limit responsibilities. Examples of this are:

- using an agreed upon contractual penalty as the single method of sanctioning,
- taking into force a limited warranty, meaning that error liability is only in force for a specified warranty period[88],
- limiting the time span available for reclamations,
- raising liability thresholds from the norm,
- using "as is" terms, within the boundaries of the Consumer Protection Act 38/1978 when the contractual relationship is not between two businesses, and
- extending the force majeure conditions.[89]

Carlsson et al. give special emphasis to business acquisition contracts, which according to their research pay more attention to and use more specific clauses for limiting liability. Representations and warranties clauses are used as the basis for these liability limitations, because they are seen as one source of liability or responsibility. In addition to using the general methods discussed above, business acquisition contracts utilize:

- deadlines for submission of claims,
- categorizing all liabilities as price reductions,
- limiting the scope of liabilities (e.g. "no other warranties" and "implied terms excluded"), and
- excluding the use of the Sale of Goods Act (355/1987) and enacting the use of "entire agreement" conditions.[90]

[88] Please note the word "warranty" is used in a different meaning that in the rest of this thesis, when discussing representations and warranties
[89] Carlsson et al. 2014: 30.
[90] Ibid.

When used in parallel with liability limitation conditions such as “no other warranties”, the representations and warranties clause directly sets the boundaries for the liability of each contract party. This also indicates that the Finnish understanding of the clause is that in using representations and warranties, the contract parties more or less knowingly accept responsibility and the contractual repercussions they may bring. When the repercussions are left to arbitration[91], there is no “one size fits all” or a “rule of thumb” that can be given for the evaluation of the contract clauses. Courts of law however give more bearing to general rules of evaluation, so it is possible to consider how liabilities can be limited in contracts.

4.3.2. Evaluating Representations and Warranties as Liability Limitations

Finnish contract doctrine begins from the principle of freedom of contract. There are multiple theories as to what exactly is meant by freedom of contract, but almost all can agree that it encompasses the freedom to decide 1) whether a contract is made, 2) who the contract is entered into with (contract party) and 3) in what way and which form (content, contract type and the contract is expressed. From this most basic, leading, principle others have also formed (such as the loyalty obligation mentioned above).[92] When discussing contract terms and how they can be used to limit liability, it is important to comment on the equality principle (in Finnish *yhdenvertaisuus*), and the principle of equity (in Finnish *kohtuusperiaate*). These principles act as the basis for judging the fairness of the contract and possible renegotiation and/or mediation, also known as adjusting a contract.

The equality principle affects the dynamics of other legal principles, such as protection of the weaker (in Finnish *heikomman suoja*), the principle of equity and the loyalty obligation. In itself, the equity principle is not often invoked in Finnish contract law. This is because by the equity principle Saarnilehto means that both contract parties have the ability and possibility to evaluate a judicial act from the perspective of their own interests and from this freely decide whether or not to engage in a contract. As a general rule, this ability, possibility and freedom is assumed to apply equally to both contract parties. Only

[91] This is usually the case when dealing with business-to-business contracts and relationships.
[92] Saarnilehto 2000: 70-82.

in the cases where these abilities and possibilities are different for the parties, either because of typical positions of the contractual parties (contractual set-up of consumer-trader) or the presence of typical effects (for example unreasonable changes in circumstance), are there legal "remedies" for balancing out the inequality.[93]

Even before further evaluating the principles that the equality principle affects (namely the principle of equity), the basic idea of balancing out inequalities raises an interesting comment from the representations and warranties point of view. If the two typical reasons for inequalities are typical positions of contract parties and the presence of typical effects, it could be surmised that in the case of representations and warranties the latter is the more relevant situation. This is because, as stated also earlier in this thesis, it requires a more serious imbalance in power between two businesses engaging in contract, to achieve the same type of positioning as between a consumer and a trader.

The principle of equity does not disrupt the freedom of contract but serves to refine and focus the content of a contract.[94] It can be seen to manifest in the Finnish Contracts Act (228/1929) section 36, which states:

> *"If a contract term is unfair or its application would lead to an unfair result, the term may be adjusted or set aside. In determining what is unfair, regard shall be had to the entire contents of the contract, the positions of the parties, the circumstances prevailing at and after the conclusion of the contract, and to other factors.*
>
> *If a term referred to in paragraph (1) is such that it would be unfair to enforce the rest of the contract after the adjustment of the term, the rest of the contract may also be adjusted or declared terminated.*
>
> *A provision relating to the amount of consideration shall also be deemed a contract term."*

[93] Saarnilehto 2000: 82-83.
[94] Saarnilehto 2000: 121-122.

The equity principle and rules related to adjusting contracts lead to case by case evaluation of the positions and performances of contract parties with differing economic and knowledge (or information) based power. The evaluation of the contract clauses is heavily dependent on whether or not they are standard or individual clauses. The evaluation criteria remain the same, but it is more usual for individual clauses to be adjusted when possible and unfair standard clauses to be set aside.[95]

Standard clauses that are used to limit liability cannot as a general rule be used to limit liability emerging from intent or gross negligence. Such clauses then cannot be adjusted in mediation, but are considered as not binding to the contract parties. In practice however the Supreme Court of Finland has used the same terminology as in section 36 of the Finnish Contracts Act, to express that such liability limitations are always considered to be unfair regardless of circumstances.[96] Liability limitations such as these are not very connected to the use and purpose of the representations and warranties clauses, so this should not represent a significant problem to drafters. Because liability for intent and gross negligence are already understood to be included in both contract party's responsibilities, it also seems like unnecessary drivel to add it to, for example, the party's warranties.

Wilhelmsson states that liability limitation clauses are one of the most important subjects for contract adjustment. The notes the Finnish government has made on unfair contract terms center mostly on contracts that concern consumers. In contrast liability limitation clauses between businesses have had a reserved reaction from the Supreme Court[97].[98]

Based on the theory, liability limitations in business-to-business contracts are less often discussed in terms of evaluation. Instead contract terms in general are given certain guidelines based on both law and general contract principles. Following this method of evaluation, representations and warranties need to meet both equality and equity principles to be considered binding as they are. As they are mostly used in business-to-business contracts, these principles are not as stiff and may leave much room for interpretation. In the

[95] Saarnilehto 2000: 122-123.
[96] Wilhelmsson 2008: 167.
[97] See for example Supreme Court resolution 1994:13.
[98] Wilhelmsson 2008: 168-169.

end though, they can be set aside or adjusted much the same as any other contract clauses, if there is significant identified imbalance and unfairness in their content and the responsibilities they raise, or if the situation changes dramatically after the contract has been brought into force.

4.4. The International Nature of Representations and Warranties

It has become clear that the representations and warranties clause more or less originated in common law countries. From there it has spread through the globalized market of mergers and acquisitions into other contracts, predominantly those centered around finance.[99] The clause has retained its original name and to a high degree, its original content. As such representations and warranties may be found in contracts in both common law and civil law countries, which together amount to a significant amount of both countries and contracts.

Due to the global nature of mergers and acquisitions as well as other finance contracts that use the representations and warranties clause, it can be deduced that the representations and warranties clause is of an international nature. The differences in evaluation of the clause that arise from differing legal systems do not dissipate the basic international nature of the representations and warranties clause. One does not need to have uniform rules for legal evaluation or even uniform concepts to allow the simple statement that the representations and warranties clause is internationally adopted and accepted in contracts. It is even possible the representations and warranties share more than a formal name and a general definition. It is likely that through the spreading of different contract templates, the representations and warranties clauses used around the world could share much of the same content and wording.

[99] E.g. Kurkela 2013, Wilkman 2018.

5. LEGAL TECHNOLOGY AND REPRESENTATIONS AND WARRANTIES

5.1. The International Perspective

Artificial intelligence and especially machine learning use extensive data banks to enable the learning of software. The more data that is available to the machine, the better equipped it is to learn what the programmer wants it to. With this in mind, the international nature of the representations and warranties clause works in the favor of using artificial intelligence based legal technology to draft these clauses. The amount of data that could be gathered from different sources from around the world would not only give the machine enough data to learn, but it could also help enable it to understand the differences between drafting in different legal systems or in different contract types. This gives huge potential to more and more dynamic and independent use of legal technology, especially within businesses and other areas with less legal knowledge.

The problem with gathering enough data to turn this opportunity into true advantage lies with the secretive nature of the contracts that the representations and warranties clause is usually in. Few law firms or businesses want to share their contracts, which most often include business secrets or other information securely protected through non-disclosure agreements. Without this wealth of data, teaching legal technology to draft representations and warranties will be much more difficult.

In her dissertation Wilkman navigated a similar issue by using templates and models found in literature.[100] Such materials could be considered to be a start to teaching the legal technology to draft specific clauses. Unfortunately, I doubt that there are enough examples of the representations and warranties clauses to be of any true use in teaching the machine to learn. For this reason, having artificial intelligence based legal technology draft contract clauses, specifically representations and warranties, would require effort from not only researchers but also law firms and businesses alike.

---

[100] Wilkman 2018.

5.2. The Problem of Ambiguity – Mixing Ambiguity and Technology

As it has hopefully become clear in the previous chapter of this thesis, the representations and warranties clause is not just one thing. It has many natures, many view points and many characteristics, which makes it impossible to give clear and certain answers on what the clause is. There are arguments for why the clause should and should not be considered a standard clause and there are arguments for why it can and cannot be understood to limit liabilities. These arguments in turn affect which arguments should and should not be used in the legal evaluation of the clauses use in practice and in theory. Such a level of ambiguity across the board must have some consequences for the integration of legal technology and the representations and warranties clause.

The more ambiguity that surrounds the nature of representations and warranties, the more difficult it is to define the ways in which legal technology can be used[101]. In Chapter 2 different definitions were explored to understand the basic nature of artificial intelligence and machine learning. One the definitions was given by Mitchell[102], when he defined machine learning using three factors: 1) task(s) (T), 2) experience (E) and 3) performance (P)[103]. For legal technology to truly be able to learn, instead of merely copy-paste what lawyers have already drafted, contract drafters should be able to define these three factors in regard to the representations and warranties.

However, the ambiguity concerning the use of representations and warranties in practical use limits how well Mitchell's factors can be defined. The more standard the clause is understood to be, the easier it should be to set the class of tasks and acceptable parameters for performance. This means that the less individual, case-set, representations or warranties there are, the easier it should be for legal technology to configure them without human intervention. Any links between the clause and liability limitations also adds another

[101] Could it also be possible to think of this as there being more room for innovation, when more ambiguity exists?
[102] The exact definition by Mitchell was: "a computer program is said to learn from experience E with respect to some class of tasks T and performance measure P, if its performance at tasks in T, as measured by P, improves with the experience E" (Bell 2014: 2.).
[103] Bell 2014: 2.

dimension of learning and difficulty, because the tasks required of the machine not only increase, but they become more intertwined and complex as well.

Without further research, at this point it is also difficult to define what experience (E) would be under these circumstances. Could it be related to the data set the machine requires to learn, the data bank of case facts and the contracts these facts led up to? Such an approach forgets the human aspect of contracts, the possibility for individuals to influence the contents of contracts with their own agendas or even human errors that have been made. It should be noted that there is no definite answer to what degree the machine can see past these human aspects, if teaching the technology through human-made examples could just cause the machine to also make the same types of "mistakes". This point of view is more focused on the most dynamic ways that legal technology could be used, that which is hopefully possible in the future.

From the capabilities list of current contract lifecycle management tools, it can be noted that machines are already used for contract drafting in one way or another. Currently what seems to be the answer to the question of ambiguity is that lawyers draft different versions of contract clauses and the machine is given parameters for the use of each one. Then when drafting the actual document, the computer evaluates the "facts" of the case and chooses the version of the clause that most closely matches the original parameters it was given. The contracting party can then also manually change the version of the clause that was used or edit small portions of the text to make it more case-specific.

In these cases, the question of ambiguity in representations and warranties is, in part, addressed by the drafting parties, when they configure the legal technology and the different versions of the clauses they want to see. This is most likely done by lawyers, which also means that at least partially, legal technology is not achieving quite the level of cost-saving and information sharing that for example Susskind imagined. Especially when using templates, even electronically manufactured ones, it is most likely a lawyer that is consulted concerning the suitability and fit of the machine's chosen text and the actual situation. In practice this means that a business can buy the license to the technology and even use it independently, but because of the unclear nature of representations and

warranties, it might be safer to still employ a lawyer to double-check the machine's work. What the business saves in terms of an hourly wage for contract drafting, it pays for instead for the use of the technology and later for the lawyer's time evaluating it all. This also conflicts with Susskind's idea of shifting the time and expertise of professionals, in this case lawyers, to the actually demanding work.

5.3. Predominance of Evaluation on a Case-By-Case Basis

So far, this thesis has looked at the possible ways of evaluating the representations and warranties clause. This has been done very thoroughly because the evaluation criteria will undoubtedly have some consequences for the standards of use of legal technology. What was discovered was that the evaluation of the clause is highly dependent on case-by-case analysis in Finland.

In general, the representations and warranties clause is multi-faceted and this thesis noted that its use in contracts relies heavily on Anglo-American roots. In addition, there is no general consensus regarding the exact content of the clause. This means that while there are general principles guiding the intent of use, what is actually written into a contract relies heavily on the lawyer, contract type, contractual relationship and the situation. The actual content then defines which evaluation criteria is used, i.e. is the clause a standard clause, used to limit liability or something else.

If the representations and warranties are considered to involve liability limitations, Finnish contract law principles understand there to be a strong relationship to the equity principle. As the equity principle deals with the relationship between the contract parties and while there are general rules in place regarding an asymmetrical contract relationship, in business-to-business contracts evaluation is more dependent on case-by-case situations. It should be noted that the Finnish Supreme Court has historically been reserved when it comes to altering contracts between two businesses, but theoretically there is a possibility.

The same type of consideration needs to be given to representations and warranties if they are considered to be a standard clause. The evaluation of standard clauses is dependent on for example the content, quality and relationship or balance between the contract parties. Especially evaluation for content and the balance of power between the contract parties has been noted to happen on a case-by-case basis. Altering standard clauses is also noted to depend on many factors, with a possibility of some, all or none of the clauses remaining in force as they are.

From the legal technology point of view, the predominance of case-by-case evaluation provides some issues. First, even through machine learning it is difficult, if not impossible, for the machine to learn the intricacies needed to perform a case-by-case analysis of the clauses used. This type of technology is still lacking, as was noted in the market study conducted by the Association and Capgemini. This means that the technology will most likely be able to suggest a version of the clause from a library, but it will be unable to pinpoint the risks associated with that particular clause. For businesses to be able to independently use the technology and thus lessen their dependence on legal professionals, this is not ideal.

Second, machine learning depends on data to continuously improve. If a contract is taken to a third party for evaluation, it is most likely that any activities are conducted behind closed doors and covered by non-disclosure agreements. This presumably leaves only a small amount of material/data for legal technology to make use of. Economically it is not viable for businesses to build or upkeep their own legal technology, even then they are unlikely to have enough material to truly develop the technology.

What legal technology can do is make the user more aware that there are certain types of risks associated with the representations and warranties clause. In the rare case that the clause is used with consumers, the technology could remind the drafter of their obligations toward such contract partners.
It should also be noted that in practice, lawyers have much experience drafting such a commonly used clause. Most contracts are not questioned or evaluated from a legal perspective. For this reason, the impact of the possible case-by-case evaluation of the

representations and warranties clause should not be given too heavy a role in determining the use of legal technology. As stated earlier in the thesis, legal technology has many positive attributes and it is changing the legal world for a reason. From the point of future development of the technology, it would be one idea to implement more advanced analytical skills into contract lifecycle management tools as well.

5.4. Mitigating Contract Risks

5.4.1. Information Sharing

As this thesis showed through Gallagher's research, the entire contract lifecycle contains its share of risks. One of the identified weak points was performance[104], which could also be understood as a disconnect between the contract and other processes within a company. It is dependent on creating a wider spread understanding of the things that have been agreed to within the contract, making sure that information is shared not only between the contract parties but also the parties in charge of carrying out the contracts.

Gallagher addressed this risk through the use of contract lifecycle management tools, which could target this particular risk through automated events, reminders and workflows[105]. As most companies already have established project management tools, integrating these into the legal technology being used would make the entire contractual process available to the individuals who need that information. In addition to information sharing, the technology can help mitigate human error and make sure certain agreed to milestones are not missed.

In the case of more advanced legal technology, the software would be able to create understandable milestones and other criteria (for example check that certain insurances are

[104] As stated earlier, performance risks include missed report or service delivery times, or a general inability to track and fulfill things that have been agreed to (Gallagher 2017).
[105] Gallagher 2017.

in place) by merely analyzing the contract text. Taking this idea a step further, this information could be presented through easier to follow diagrams, tables and pictures.

Even though performance related issues are rarely addressed within representations and warranties, the positive effects of legal technology are more understandably demonstrated by this example. All of the aforementioned is not only true for bettering risks associated with performance, but also stands true for the other identified weak points such as contract renewal processes, unapproved contracts, compliance issues and access to contracts with similar terms.

Of this list of possible weak points identified by Gallagher, especially compliance and contracts with similar terms are relevant to the representations and warranties clause. Compliance issues regarding, for example, company insurance policies may very well be not only represented but warranted within a contract. Similarly, as the representations and warranties clause is one of the most commonly used contract clauses and can be understood to be a standard clause, a company may need to visit contracts again when reviewing their drafting methods. In the simple case of an error in the representations and warranties, a business will want to know how many other contracts the same error can be found in. Well organized legal technology is able to share relevant information with the relevant stakeholders, during the contract negotiation phase through to the implementation, not only for the contract as a whole but for representations and warranties as a separate clause.

In practice, information sharing related to representations and warranties in particular can mean a number of things, all of which depend on the actual drafted contract. If the clause was used, for example, in an acquisition contract to express a certain market value that the contract party promises the stock will not go under before the acquisition takes place[106], the technology being used could then cross reference this value with stock prices (in the case the company is publicly traded). Both contract parties could have access to this information and in good spirit also take preventative measures, if something

[106] As mentioned by Carlsson et al. 2014: 30.

unexpected were to happen. Representations and warranties together with legal technology would be able to limit risks associated with one-sided information, if the correct performance indicators and subjects for cross-references can be found and mutually agreed to.

5.4.2. Aiding the Disclosure Obligation of Standard Clauses

In the same line of thought as with information sharing, legal technology offers many benefits when striving to be compliant with principles of Finnish contract law. This not only works to cover the business' interests legally, but fosters a better environment between contract parties. As stated earlier, Finnish contract principles have generally accepted the doctrine on giving the counterparty particular notice about any contract clauses that could be considered to be severe or surprising.

From the perspective of legal technology, it would be worth considering a function that pushes notifications onto both contracting parties where severe or surprising representations or warranties appear. These notifications would then be accepted in a documented and verifiable way, and the responsibilities of both contract parties could be left to automation. As Gallagher also mentioned in their 2017 research, the use of technology is a good way of controlling and limiting the risks of human error. In addition, in the case of dispute both parties would be able to show which representations and warranties have been explicitly approved by either party. Because the legal technology could make note of these situations, the contract parties also would not need to fear the other party slipping in something they have not noticed.

What legal technology is not necessarily capable of at this time is evaluating and judging which contract clauses could be considered to be severe or surprising. Such capability would need to be built up using large sets of data, but as most standard clauses are evaluated *in casu*, this presents problems. As representations and warranties are usually used in mergers and acquisitions, it is also impossible to use earlier contracts between the particular contract parties in question. If used in, for example, recurring sales agreements between partners, the technology could use these to an extent. In this case though, severe

and surprising clauses are less likely to exist and most likely should have been addressed the first time they were used.

6. CONCLUSIONS

6.1. Research Results

The research question for this thesis was defined as:

> What is the relationship between artificial intelligence based legal technology and the representations and warranties clause as understood under Finnish contract law?

This thesis aimed to answer this question by first gaining an understanding of legal technology from several points of view. First, this thesis defined the history and definitions of artificial intelligence and machine learning. Next, it looked at the supporting arguments for using legal technology from a business perspective and then discussed the current state of legal technology.

This thesis broke down the evaluation of the representations and warranties clause into three parts. The clause was defined using laymen's dictionary definitions and using the little available research on the matter, to understand that the representations and warranties clause is meant to give statements of fact and guarantee their truthfulness on pain of misrepresentation or a breach of warranty. The clause was then broken down further by nature and evaluated by nature as a standard clause, as a source of information, for limiting liability and as an internationally used clause.

From these two sections, it is possible to answer the research question. The relationship between artificial intelligence based legal technology and the representations and warranties clause as understood under Finnish contract law is heavily dependent on how the clause is used in each particular instance. This means that in essence, the relationship remains somewhat unclear.

The international nature of the clause as well as the role of legal technology in the mitigation of contract risks pose positive insights into the combining of the representations and warranties clause and legal technology. In contrast however, the ambiguous nature and case-by-case evaluation of representations and warranties make giving clear answers difficult. This in turn also complicates the use of legal technology or at the very least reduces the usefulness of the technology as it is at this moment in time.

6.2. Future Research

In the Introduction of this thesis, it was said that the final chapters would bring together two different concepts to try and understand their merging points, in both positive and negative ways. In that goal, this thesis has succeeded. The challenges faced in effectively and functionally combining old clauses with new technology were addressed, to the extent which the thesis could. Even though this thesis did not gain the insight the author had personally hoped it would, the author still remains adamant that this type of research into the practical legal world needs to continue.

First, this research question could be revisited with better systemization of the research method. The two concepts could be brought together more tightly from the beginning, possibly giving more insight into their points of conformity and conflict.

Second, the support of legal professionals and their contracts would give a clearer picture of the representations and warranties clause. This thesis relied heavily on assumptions and a few lines here and there in literature and thus requires more better-rounded material for different results. These materials could be copies of actual contracts that have been used or questionnaires and/or surveys conducted by the International Association for Contract and Commercial Management.

On the other hand, collaboration with legal technology developers would also aid in the sharpening of the current understanding of the capabilities and future limits of the technology. At the same time, businesses also need to be interviewed and questioned to gain

insight into what they truly need and want from legal technology tools. In an ideal world, this research would be able to ultimately bring all of these different points of view together and breach a small part of the gap between the theoretical and practical worlds of not only law, but technology and business as well.

Third, this same method of research needs to be conducted on other contract clauses, as well as contracts as a whole. Even though legal technology has already been taken into use, the backing of research would act as an accelerant not only for developers but users in the business world. Without proper incentives for the sharing of legal information and contract drafting practices, the development of the legal industry will remain stagnate, controlled and protected. Incentives can be, for example, cost reductions for businesses, more effective management of legal resources in law firms and the enriching of legal research through multi-disciplinary research and collaboration. With the support of data gathered straight from businesses, the development of legal technology and cooperation with legal professionals has the highest possibility of being of actual business-use.

Finally, the implications of legal disruption through legal technology could be studied, especially from the point of view of smaller legal families. This could take into account the possible homogenizing of legal systems, the possible effects on judicial actions across legal borders and the possibly changing roles of the individuals working in the area where law and business meet. Research can also examine whether legal technology creates a win-win situation for all parties involved or if the benefits are at an imbalance.

LIST OF REFERENCES

Adams, K. A. (2015). Eliminating the Phrase Represents and Warrants from Contracts. *Transactions: The Tennessee Journal of Business Law* [online] 16 [cited 26.10.2016] 203–229. Available on the World Wide Web: <URL: http://trace.tennessee.edu/cgi/viewcontent.cgi?article=1342&context=transactions>.

Apple (2018). iOS Siri. [cited 14.02.2018] Available on the World Wide Web: < https://www.apple.com/ios/siri/>.

Bell, Jason (2014). *Machine Learning: Hands-On for Developers and Technical Professionals* [online]. 1st edition. Somerset: Wiley, 2014 [cited 06.02.2018]. Available on the World Wide Web: <https://ebookcentral-proquest-com.proxy.uwasa.fi/lib/tritonia-ebooks/reader.action?docID=1818248&query=>.

Carlsson, M., C. Fogelholm, C. Herler, Å. Krook, A. Lindqvist, H. Merikalla-Teir, J. Syrjänen, S. Tuominen & U. Von Weissenberg (2014). *Sopimusriskit* [online]. 1st edition. Helsinki: Talentum Media Oy, 2014 [cited 11.12.2018]. Available on the World Wide Web: <URL: http://verkkokirjahylly.talentum.fi.proxy.uwasa.fi/teos/HAIBIXGTFF#%252Fhaku:sopimusoik%252Fkohta:1%2Fkohta:30/kohta:1>.

Coates, John C. IV (2015). M&A Contracts: Purposes, Types, Regulation, and Patterns of Practice. *Harvard John M. Olin Discussion Paper Series Paper No. 825 04/2015* [online] [cited 19.10.2016]. Available on the World Wide Web: <URL: https://dash.harvard.edu/bitstream/handle/1/17743076/Coates_825.pdf?sequence=1>.

Cristianini, N. (2016). Intelligence Reinvented. *New Scientist* [online] 232:3097 [cited 06.02.2018], 37-41. Available on the World Wide Web: <http://web.a.ebsco-host.com.proxy.uwasa.fi/ehost/detail/detail?vid=1&sid=7087b020-22f4-4060-9939-9365fcbec58b%40ses-sionmgr4009&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=119072415&db=afh>.

Frankel, Michael E. S., and Larry H. Forman (2017). *Mergers and Acquisitions Basics: The Key Steps of Acquisitions, Divestitures, and Investments* [online]. John Wiley & Sons, Incorporated, ProQuest Ebook Central [cited 17.04.2019]. Available on the World Wide Web: <https://ebookcentral-proquest-com.proxy.uwasa.fi/lib/tri-tonia-ebooks/detail.action?docID=4833701>.

Gallagher, P. (2017). Targeting Risk with Effective Contract Management. *Contract Management* [online] 57 (3) [cited 29.11.2018], p. 28-31, 33-35. Available on the World Wide Web: <https://search-proquest-com.proxy.uwasa.fi/docview/1898950439?accountid=14797>.

Haapio, H. (2013). *Next generation contracts: A paradigm shift*. Helsinki: Lexpert Ltd.

Hemmo & Hoppu (2006-). *Sopimusoikeus* [online]. Helsinki: WSOYpro 2006- Sanoma Pro Talentum Media Alma Talent Oy. Available on the World Wide Web: <http://fokus.almatalent.fi.proxy.uwasa.fi/teos/IACBXXBTAFJB?#kohta:SOPI-MUSOIKEUS((20)>.

IACCM & Capgemini (2018). IACCM-Capgemini Automation Report [online] [cited 14.04.2019]. Available on the World Wide Web: <https://s3.eu-central-1.amazo-naws.com/iaccmportal/resources/files/10162_iaccmcapgeminiautomationre-port.pdf>.

Koulu, Riikka (2017). Legal Tech Lab – Uusia avauksia oikeusteknologiaan. *Oikeus* [online] 1/2017 [cited 27.02.2018], 96-103. Available on the World Wide Web: <https://www-edilex-fi.proxy.uwasa.fi/oikeus/17653.pdf>.

Kurkela, Matti S. (2013). "Representations and Warranties" -ehto ja vastuutus osakekaupassa. *Edilex Edita Publishing Oy* [online] 4 [cited 12.10.2016]. Available on the World Wide Web: <URL: https://www-edilex-fi.proxy.uwasa.fi/artikkelit/9349.pdf>.

Mohaghegh, S. D. & Khazaeni, Y. (2011). Application of Artificial Intelligence in the Upstream Oil and Gas Industry. In: Artificial Intelligence: Approaches, Tools, and Applications [online]. Brent M. Gordon. Happaughe, New York: Nova Science Publishers, Incorporated [cited 05.11.2018]. Chapter 1. Available on the World Wide Web: <https://ebookcentral-proquest-com.proxy.uwasa.fi/lib/tritonia-ebooks/reader.action?docID=3021220&query=Artificial+Intelligence>.

Oxford Living Dictionaries (2018 a). Definition of artificial in English. [cited 08.02.2018]. Available on the World Wide Web: <https://en.oxforddictionaries.com/definition/artificial>.

Oxford Living Dictionaries (2018 b). Definition of intelligence in English. [cited 08.02.2018]. Available on the World Wide Web: <https://en.oxforddictionaries.com/definition/intelligence>.

Oxford Living Dictionaries (2018 c). Definition of representation in English. [cited 08.11.2018]. Available on the World Wide Web: <https://en.oxforddictionaries.com/definition/representation>.

Oxford Living Dictionaries (2018 d). Definition of represent in English. [cited 08.11.2018]. Available on the World Wide Web: <https://en.oxforddictionaries.com/definition/represent>.

Oxford Living Dictionaries (2018 e). Definition of warranty in English. [cited 0811.2018]. Available on the World Wide Web: <https://en.oxforddictionaries.com/definition/warranty>.

Oxford Living Dictionaries (2018 f). Definition of warrant in English. [cited 08.11.2018]. Available on the World Wide Web: <https://en.oxforddictionaries.com/definition/warrant>.

Panel O.C.S.A.A. (1997). *Computer Science and Artificial Intelligence* [online]. Washington D.C.: National Academies Press [cited 05.11.2018]. Available on the World Wide Web: <https://ebookcentral-proquest-com.proxy.uwasa.fi/lib/tritonia-ebooks/detail.action?docID=3376144&query=Artificial%20Intelligence#>

Parnas, D. L. (2017). The Real Risks of Artificial Intelligence. *Communications of the ACM* [online] 60:10 [cited 05.02.2018], 27-31. Available on the World Wide Web: <http://web.b.ebscohost.com.proxy.uwasa.fi/ehost/pdfviewer/pdfviewer?vid=3&sid=a7d7fc43-d65b-459c-8d69-05c0b5eb2e66%40sessionmgr103>.

Saarnilehto, Ari (2000). *Varallisuusoikeuden kantavat periaatteet.* 1st edition. Helsinki: Werner Söderström Lakitieto Oy.

Saarnilehto, A., V. Annola, M. Hemmo, J. Karhu, L. Kartio, E. Tammi-Salminen, J. Tolonen, J. Tuomisto & M. Viljanen (2019). *Varallisuusoikeus* [online]. Helsinki: Alma Talent Oy [cited 04.02.2019]. Available on the World Wide Web: <https://fokus.almatalent.fi.proxy.uwasa.fi/teos/IAIBCXJTBF#kohta:VARALLISUUSOIKEUS((20)>.

Shi, Z. (2011). *Advanced Artificial Intelligence* [online]. 1. edition. Singapore: World Scientific Publishing Co Pte Ltd [cited 05.11.2018]. Available on the World Wide Web: <https://ebookcentral-proquest-com.proxy.uwasa.fi/lib/tritonia-ebooks/detail.action?docID=840558#>.

Susskind, Richard (1989). *Expert Systems in Law*. 1st edition. Oxford: Clarendon Press.

Susskind, Richard (1993). *Essays on Law and Artificial Intelligence*. 1st edition. Oslo: Norwegian Research Center for Computers and Law.

Susskind, Richard (2014). *Juristin huominen: Johdatus tulevaisuuteesi*. 1st edition. Helsinki: Talentum Media.

Susskind, R. & D. Susskind (2015). *The Future of the Professions: How Technology Will Transform the Work of Human Experts* [online]. 1st edition. United Kingdom: Oxford University Press [cited 15.02.2019]. Available on the World Wide Web: <https://ebookcentral-proquest-com.proxy.uwasa.fi/lib/tritonia-ebooks/reader.action?docID=2186874#ppg=5>.

Tekoäly.info (2018). Tekoälyn historia. [cited 14.02.2018] Available on the World Wide Web: < http://xn--tekoly-eua.info/tekoaly_historia/>.

Vardi, M. Y. (2016). The Moral Imperative of Artificial Intelligence. *Communications of the ACM* [online] 59: 5 [cited 05.02.2018], 5. Available on the World Wide Web: <http://web.a.ebsco-host.com.proxy.uwasa.fi/ehost/pdfviewer/pdfviewer?vid=1&sid=8e4e8bc4-2b8f-4d8b-ae47-bfcc99d64bb1%40sessionmgr4007>.

Walters, Adam (2009). Commentary: Representations and warranties in project agreements can sometimes cause confusion. *Daily Journal of Commerce* [online] [cited 08.11.2018]. Available on the World Wide Web: <https://search-proquest-com.proxy.uwasa.fi/docview/219233346?accountid=14797>.

Wilhelmsson, Thomas (2008). *Vakiosopimus ja kohtuuttomat sopimusehdot*. 3rd edition. Helsinki: Talentum.

Wilkman, N. (2018). *Interpretation of Share and Business Acquisition Contracts: A Study of Anglo-American Concepts and Practices Influencing Share and Business Acquisitions, of Compatibility with Nordic Law and of Possible Effects on Interpretation of Contracts Governed by Nordic Law* [online]. Helsinki: Unigrafia Oy [cited 10.02.2019]. Available on the World Wide Web: <https://helda.helsinki.fi/bitstream/handle/10138/246102/INTERPRE.pdf?sequence=1&isAllowed=y>.

Wilson, Robert A. (1962). Computer Retrieval of Case Law. *Southwestern Law Journal* [online] 16: 3 [cited 27.02.2018], 409-438. Available on the World Wide Web: <http://scholar.smu.edu/cgi/viewcontent.cgi?article=4147&context=smulr>.